Migration, Remittances and Regional Development
in Southern Morocco\(^1\)

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**Abstract** Although Morocco has evolved into one of the world’s leading emigration countries, the systematic study of the developmental impact of migration in migrant-sending regions in Morocco and the Maghreb has been relatively neglected after a temporary surge of pessimistic studies in the 1970s. Empirical work from this region has therefore been largely absent from the lively theoretical debate on migration and development. This study attempts to re-establish this link through qualitative research and a survey among 507 nonmigrant, internal and international migrant households in the Moroccan Todgha oasis. The study shows that international migration and remittances have significantly contributed to economic development, improved standards of living and enabled the partial emancipation of subaltern ethnic groups. International migrant households invest more than others in housing, agriculture and other enterprises. Risk spreading and income stabilisation rather than increasing incomes seem to be the prime rationale behind internal migration, although internal migration tends to facilitate the education and international migration of younger household members. Remittance expenditure and investments have stimulated the diversifying and urbanising regional economy and have triggered a counter-flow of “reverse” internal migration. However, several structural constraints prevent the high development potential of migration from being fully realised.

**Key words:** Wage-labour migration; remittances; investments; rural development; social change; Middle East and North Africa

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INTRODUCTION: THE MIGRATION AND DEVELOPMENT DEBATE

Since the 1960s, Morocco has acquired a central place in the Euro-Mediterranean migration system and witnessed increasing diversification in migration destinations outside its former coloniser, France. Out of a population of 30 million, over 2 million Moroccans currently live in European countries like France, the Netherlands, Belgium, Germany, Italy and Spain. Receiving over US$3.3 billion in official remittances in 2001, Morocco is the developing world’s fourth largest remittance receiver. The relatively stable remittance flow is five times higher than official development aid and also exceeds FDI and revenues from tourism and the export of agricultural produce and phosphates. The inflow of remittances is not only crucial to the balance of payments, but also seems to have an immediate poverty decreasing effect (cf. Teto 2001).

The surge in remittances sent by migrants to developing countries has recently drawn substantial attention among scholars and policy makers (cf. Ratha 2003). Remittances sent back to migrant-sending regions are often said to play a vital role in alleviating poverty and improving livelihoods. Remittances seem to be a safety net for relatively poor areas, as they are freer from political barriers and controls than either product or other capital flows (Jones 1998a:4). It has been argued that this “private” foreign aid flows directly to the people who really need it and does not require a costly government bureaucracy on the sending side, while far less of it is likely to be siphoned off into the pockets of corrupt government officials (Kapur 2003:10).
Nevertheless, it remains doubtful whether such optimism is wholly justified. Firstly, as with the process of migration itself, most of the direct benefits of remittances are selective and tend neither to flow to the poorest members of communities (cf. CDR 2002:2), nor to the poorest countries (Kapur 2003: 7-8). Secondly, although few would deny the direct positive contribution of remittances to the living standards of families left behind, the extent to which migration and remittances can bring about sustained development and economic growth in migrant-sending regions and countries is quite a different question.

This very issue has been the subject of heated debate over the past decades (see Nyberg-Sørensen et al. 2002; Papademetriou and Martin 1991; Taylor et al. 1996a and 1996b). On the one hand, developmentalist “migration optimists” argue that migration leads to a North-South transfer of capital and accelerates the exposure of traditional communities to rational ideas, modern knowledge and education. International migration was perceived especially in the 1950s and 1960s as a major contributor to development in poor countries. The general expectation was that remittances — as well as the experience, skills and knowledge that migrants would acquire abroad before returning — would greatly help developing countries in their economic take-off (Penninx 1982, 782–3; cf. Beijer 1970). In recent years, this developmentalist view of migration and development is experiencing a renaissance (cf. Kapur 2003).

On the other hand, “migration pessimists” — inspired by the structuralist paradigm and dependency theory — have argued that migration and concomitant changes, such as growing inequality and individualism, lead to the withdrawal of human capital and the breakdown of traditional, stable village communities and regional economies, provoking the development of passive, non-productive communities, which become increasingly dependent on remittances.
Moreover, they argue that remittances are spent mainly on luxury goods and “consumptive” investments and are rarely invested in productive enterprises. In this perspective, South-North migration is perceived as discouraging the “autonomous” economic growth of migrant-sending countries (cf. Lipton 1980, Rubenstein 1992). Instead of encouraging development, migration is rather seen as one of the very causes of further underdevelopment.

In general, the more pessimistic views have tended to dominate, a trend that is also found in the Moroccan literature on migration and development. Migrant remittances would be used mainly to pay for luxury goods and “non-productive” investments like construction, real estate speculations and commerce (cf. Seddon 1981). “Productive” investment in agriculture or industry would, by contrast, be very limited. In many instances, it is argued, migrant households even withdraw from productive activities in or outside agriculture (cf. Berrada et al. 1978; Fadloullah et al. 2000; Heinemeijer et al. 1976; Lazaar 1987; Kagermeier 1997; Mezdour 1993). In the case where traditional agriculture persists or investments occur, it mainly concerns an ‘economically non-viable’ form, often described as ‘sentimental’ (Bencherifa 1991). Therefore, the impact of migration on development in the regions of departure can even be negative in contributing to the ‘development of underdevelopment’ (cf. Berrada et al. 1978).

In the 1980s and 1990s, the new economics of labour migration (NELM) emerged mainly within an American research context as a response to both developmentalist theory (the “migration optimists”) and structuralist theory (the “migration pessimists”). Both approaches seemed too rigid and determinist to deal with the complex realities of migration and development interactions. NELM offered a more subtle view, in which both positive and negative development responses were possible (cf. Taylor 1999). Stark (1978; 1991)
revitalised academic thinking on migration from the developing world, by placing the
behaviour of individual migrants within a wider societal context and considering the
household—rather than the individual—as the most appropriate decision-making unit. This
approach perceives migration as the risk-sharing behaviour of households. Households are
better able than individuals to diversify resources like labour in order to minimise income
risks. This approach integrates motives other than individual income maximisation that play a
role in migration decision-making. Migration is perceived as a household response to income
risks, since remittances serve as income insurance for households in the country of origin
(Lucas and Stark 1985, 902).

In addition, NELM scholars argue that migration plays a vital role in providing a potential
source of investment capital, which is especially important in the context of the imperfect
credit (capital) and risk (insurance) markets that prevail in most developing countries (Stark
1991; Taylor 1999). Such markets are often weakly developed and inaccessible to non-elite
groups. Hence, migration can also be considered as a strategy to overcome various market
constraints, enabling households to invest in productive activities.

NELM has striking (though as yet unobserved) conceptual parallels with the “livelihood”
approaches which have evolved among geographers, anthropologists and sociologists
conducting micro-level research in developing countries. A growing body of empirical work
has raised awareness that the poor are not only passive victims of global macro-forces, but
actively try to improve their livelihoods within the constraining conditions in which they live.
Growing awareness of the tremendous diversity of the ways in which people in poor countries
organise their daily lives and the creativity they demonstrate there, has pointed to the
fundamental role of human agency.
Bebbington (1999) stressed the need to broaden our understanding of rural livelihoods in the developing world, without restricting the analysis to agriculture or natural resources, since many households are diversifying their livelihoods. In this context, migration is one of the main elements of the strategies to diversify, secure and, potentially, durably improve livelihoods, often in combination with other strategies, such as agricultural intensification and local non-farm activities (McDowell and De Haan 1997:1-3). In this view, labour migration is often more than just a short-term survival or crisis-coping strategy or a flight from misery. Rather, it is seen as a deliberate decision to improve livelihoods, facilitate investments (Bebbington 1999:2027) and help to reduce fluctuations in the family income, that has often been entirely dependent on climatic vagaries (McDowell and De Haan 1997:18). Migration can then be seen as a means of acquiring a wider range of assets to insure against future shocks and stresses (De Haan et al. 2000:30).

An increasing number of more recent empirical studies suggest that the developmental impacts of migration can be far more positive than was commonly assumed. Several studies have shown that not only do migrant households tend to have a higher propensity to invest than do non-migrant households, but also that consumption and the often trivialised “non-productive” investments in housing, small businesses and education can have positive income multiplier effects, through which the benefits or remittances might also indirectly accrue to non-migrant households (for extensive reviews, see Taylor et al. 1996a and 1996b).

However, our knowledge of the impact of migration on development in sending societies is still fragmentary for three main reasons. Firstly, there is general lack of good-quality data in the form of empirical studies that systematically explore the developmental impact of
international migration at the local and/or regional level (cf. Fawcett and Arnold 1987). A second reason is the weak methodological foundations and the poor analytical quality of much prior research (Taylor 1999). For instance, many migration impact studies have been done without even including non-migrant households in research populations.

Thirdly, recent theoretical insights into migration and development are based largely on micro-studies done in Latin America and, in particular, Mexico to the neglect of the major source countries of European-bound labour migration south and east of the Mediterranean (cf. Massey et al. 1998). In particular, the systematic study of migration and development in the Maghreb (Morocco, Algeria and Tunisia) sub-region has been largely neglected after a temporary surge of largely pessimistic studies in the 1970s, while the migration and development context and the theoretical debate have radically changed since then. Existing empirical work tends to be exclusively descriptive and disconnected from the broader theoretical debate on migration and development. Consequently, the propositions of NELM and related approaches have been hardly examined in the Maghreb.

RESEARCH AIM AND METHODOLOGY

This study attempts to re-establish such a link between a small part of the Maghrebi empirical reality and the broader migration and development debate. It aims to analyse the impact of internal and international labour migration on social and economic development in one particular migrant-sending region located in southern Morocco: the oasis of the Todgha valley. We will use this analysis to assess the validity of the hypotheses that labour migration is a household livelihood strategy to (1) minimise and spread income risks; (2) gain access to
higher earnings streams; and to (3) overcome local market constraints on investment by households. A second, more general, aim is to assess how migration has affected social and economic life, and how these processes have reciprocally interacted to transform the regional geographical context as a whole. Unlike most prior work, the study simultaneously considers internal and international migration, assuming that both movements are functionally and reciprocally related.

Data collection by the author took place between September 1998 and June 2000. Following a participatory appraisal, a socio-economic household survey was conducted among 507 households containing 3,801 individuals, including 237 international (150 current and 87 returned) and 457 internal (292 current and 165 returned) migrants, in six villages. These villages were located across the Todgha and were selected on the basis of a spatially clustered, non-random sample, such that the survey covered the different migratory, ethnic, agricultural and geographical settings prevailing in the valley. In addition to continuous participant observation, open interviews were conducted on migration, agricultural practices, investments and socio-cultural relations. In 2003, additional interviews were conducted among prospective migrants.

The household\(^2\) was defined as a group of people who live under the same roof and normally eat together. Migrants were only considered as part of the household if they did not establish their own household (usually through marriage or family reunification) at the destination (cf. De Haas 2003).

\(^2\) Criticism on household approaches has focused on the underlying assumption of household members taking unanimous decisions to the advantage of the whole group. Feminist researchers in particular have argued that this masks intra-household power inequalities (cf. Lieten and Nieuwenhuys 1989). However, instead of rejecting the household as a central unit of analysis altogether, the lesson is rather to apply a non-rigid household approach that simultaneously considers individual, household and supra-household level processes through a combination of surveys, (open) interviews and participant observation research techniques (cf. De Haas 2003).
De Haas 2003). These generally are single migrants or married migrants who left their spouse and children behind.

Five household categories are distinguished. Firstly, households that have never been involved in international migration and that are currently not involved in internal migration are classified as non-migrant households. Secondly, internal migrant households whose migrant members are exclusively internal migrants living outside the Todgha. Thirdly, current international migrant households with at least one member of the household currently living abroad. Fourthly, returned international migrant households with at least one international return migrant, but do not currently contain members living abroad. Fifthly, households that are not directly involved in international migration, but which have family members working abroad by whom they are financially supported, are defined as indirect international migrant households.

**CHANGING CONTEXTS, CHANGING MIGRATION**

The Todgha is a small river oasis located on the southern slopes of the High Atlas Mountains in Morocco. In 2000 the valley housed approximately 70 000 inhabitants living in 64 villages and the rapidly expanding town of Tinghir (25 000 inhabitants). Until French colonisation, the Tamazight (Berber-) speaking oasis dwellers mainly depended on irrigated subsistence agriculture, which, in spite of the arid climate, was made possible by the very limited but perennial flow of water in the Todgha. In the downstream part of the valley, where surface river water is scarcer, traditional irrigation techniques consisting of tunnels and shafts (known as *khettaras*) are employed to tap underground water resources.
Like most of rural Morocco, the Todgha valley remained largely free of the central sultanic state power based in the cities west and north of the High Atlas until the 20th century. The installation of the French protectorate over Morocco (1912-1956) marked the beginning of an era of tumultuous change. Because of fierce resistance from inland tribes, the French only gained control over the valley in 1931.

The incorporation of this formerly stateless society of Berbers (Imazighen) into the modern French and – after independence – Moroccan-Arabic state, meant the loss of tribal autonomy and the decline of regional and trans-Saharan (caravan) trade networks, as well as nomad-peasant trade and barter relations. Combined with a steep population increase, these processes have contributed to undermining traditional oasis livelihoods. However, the transformation of the valley’s political and economic macro-context through the incorporation of the Todgha into the modern state and the capitalist economy, along with the concomitant expansion of infrastructure and means of transport, created entirely new livelihood opportunities through wage labour outside traditional subsistence oasis agriculture both within and, in particular, outside the valley.

These processes have culminated in the increasing importance of labour migration from the Todgha. Although seasonal and circular migration by harvest workers or occupational specialists (notably well diggers) towards northern and western Morocco has existed for centuries, incorporation of the valley into the modern state and the capitalist economy have radically enlarged the geographical scope of population mobility. In fact, this ‘mobility transition’ (cf. Zelinsky 1971) had already started with the French colonisation of neighbouring Algeria in 1830. From the second half of the nineteenth century, Todghawi
went to work in the cities and on the farms of French *colons* in Algeria. However, French occupation of Morocco and the concomitant urbanisation created unprecedented opportunities for internal migration, mainly to coastal cities like Rabat and Casablanca. The combined effect of Algerian independence (1962) and the economic boom in Europe caused a reorientation of international migration flows, which shifted towards France and, to a lesser extent, Belgium and the Netherlands. The late 1960s and early 1970s were the golden age of labour migration, when workers were directly recruited, the costs and risks of migration were relatively low and a large number of relatively poor Todghawi were able to migrate to Europe.

Increasingly restrictive European immigration regulations following the 1973 Oil Crisis did not lead, however, to a significant decrease in out-migration. Paradoxically, the increasingly restrictive immigration policies interrupted the circular character of migration from the Todgha. Most “guest workers” decided not to return, and their decision to settle coincided with a huge increase of family reunification in the 1970s and 1980s, which entailed the departure of the worker’s entire nuclear family. When the process of family reunification was largely complete towards the end of the 1980s, the dominant source of family migration became new marriages between non-migrants in the Todgha with migrants or, increasingly, migrants’ children, residing in Europe. Complying with an ancient tradition of endogamous marriages, spouses tend to be members of the same community, lineage (*ighs*), or family.

The 1980s and 1990s were characterised by a general diversification of migration strategies and destinations. Besides the increasing reliance on family migration, another consequence of restrictive immigration policies was a significant increase in undocumented migration. There also occurred a geographical diversification of migration flows after 1990, when Italy and,
Map 1. Migration destinations of the surveyed population (as % of all migrants)
particularly, Spain emerged as new destination countries for legal and undocumented labour migrants. After a lapse between 1975 and 1990 – when family migration dominated – a surge in new “primary” labour migration to southern Europe has occurred.

Although France remains the main focus for international migrants (accounting for 61 percent of all surveyed international migrants) with significant migrant communities in Montpellier, Nice and Paris, destinations like the Netherlands (8 percent), the Arab oil countries (6 percent), Spain (13 percent) and Italy (4 percent) have grown in relative importance (see Map 1). In the 1990s alone, Spain (33 percent), France (22 percent), the Netherlands (17 percent) and Italy (7 percent) attracted the lion’s share of migrants. Over half the international migrants work in the construction industry, 15 percent work in agriculture and 14 percent in the service sector.

Besides international migration, rural-to-urban migration increased in the post-colonial era to the further detriment of the historically-rooted seasonal migration of harvest workers to the Middle Atlas mountains. In addition to the traditional destinations of the Atlantic coast (e.g., Rabat, Casablanca), the boomtowns of the northern Rif (e.g., Nador, Tétouan) have become important new destinations (see Map 1). Most internal migrants work in construction (28 percent) or service jobs (24 percent). A distinct, relatively wealthy and educated elite of internal migrants mainly comprises civil servants and some private sector professionals (7 percent) and a growing category of student migrants (22 percent).

On average, the international migrants in the survey were not significantly better or worse educated than non-migrants of the same age category. The incidence of landlessness is 22
percent among non-migrant and 19 percent among internal migrant households, compared with only 4 and 2 percent among international and returned migrant households. It therefore seems that people belonging to the poorest households have been less able to migrate internationally.

HOUSEHOLD LIVELIHOODS, REMITTANCES AND WEALTH

Migration has become an all-pervasive phenomenon in the Todgha valley. Half of the surveyed active male population (16-65 years) has been, or is involved in internal (22.0 percent current and 11.0 percent returned) or international migration (11.4 percent current and 3.6 percent returned). 20.1 percent of all households are current international migrant households, 12.8 percent are returned migrant households and 7.5 percent are of the indirect international type. Taken together, 40.4 percent of all households are international migrant households of some sort. 25.0 percent are internal migrant households, while only 34.5 percent of all households are non-migrant. This reveals the extent to which migration has become an integral part of the multi-local and multi-sectoral livelihood strategies of oasis households. The economy of the valley is diversifying, with an increasing concentration of social and economic activities in Tinghir town. Even among non-migrant households, 86.2 percent have local non-agrarian sources of income. Only 4.3 percent of all households rely exclusively on agriculture.

There is a strong and significant association between migration participation and household income, with the main dividing line running between households with and without access to international remittances. The average income of households directly involved in international
migration is more than double that of non-migrant and internal migrant households. Income inequality is high, with a Gini index of 0.486 at the household level (see Table 1).

[Table 1 somewhere here]

Internal migrant households do not earn substantially more than non-migrant households. While their average household income is slightly higher, per capita incomes are slightly lower because internal migrant households tend to be larger. Nevertheless, the group living on less than 1,000 dirham\(^3\) per month is substantially smaller than among non-migrant households. The standard deviation of income is more than double among non-migrants in spite of being almost equal on average incomes. 37.0 percent of non-migrant households live on less than 1,000 dirham per month, against 18.5 percent among internal migrants. Furthermore, the income distribution among internal migrant households is bipolar, indicating that this category is composed of distinctively poorer and richer households. The latter group generally contains migrants working as civil servants in cities.

Internal and international remittances account for 9.8 and 32.8 percent of the income of all surveyed households, respectively. Among households involved in international migration, remittances account for 53-59 percent of the total cash income. Remittances represent 35.6 percent of the total income of internal migrant households (see Table 2).

[Table 2 somewhere here]

Interestingly, international migrant households also tend to have higher local cash incomes, in

\(^3\) 1 US$ = 9.81 Moroccan Dirham (DH) (1999 average).
particular, from agriculture, than non-migrant households. Internal migrant households, on the contrary, tend to have lower local earnings than non-migrants. This suggests that international migrant households do not tend to depend solely on remittances and withdraw from local economic activities, but continue to be involved in local economic activities despite receiving significant income from overseas. The image of the Todgha as a region passively relying on migrant remittances therefore appears to be erroneous. Notwithstanding the region’s intensive participation in international migration, local activities have remained more important than remittances as a source of income.

The higher incomes of households involved in international migration are neatly mirrored in a strong, positive and significant association between international migration participation and household wealth indicators and living conditions (see Table 3). For instance, 73.8 percent of returned international households live in a concrete house and 93.8 percent have a lavatory in their house, compared with 35.6 and 56.6 percent among non-migrant and internal migrant households, respectively.

Although international migrant households spend more on daily consumption, the differential with other household categories is not large. In fact, non-migrant households spend a larger share of their total expenditure on daily consumption (see Table 3). Engels’ law also applies in this particular context: the income elasticity of demand for food and other primary products

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The wealth index was calculated from data on the ownership of durable consumer goods: electric or motor pump, drinking water, telephone, television, video, satellite dish, refrigerator, food processor, washing-machine, electronic iron, water heater, bicycle, moped, car and delivery van. Each item owned was counted as a score of 1, each item not owned as a score of 0. The index is the sum of all scores. The index of living conditions was calculated in the same way, using the following variables: concrete house; lavatory; shower; private well; electric pump; diesel pump. Daily consumption is the sum of expenses on food, housing and public amenities.
and services is relatively low.

[Table 3 somewhere here]

The results of a Bonferroni multiple comparison of group means for income, wealth and living standard indicators indicated significant differences between (1) non-migrant and internal migrant households and (2) current, indirect and returned international households. Within these two main groups, differences between means are not significant. This suggests that the new major socio-economic divide is between households with and without access to international remittances (see the discussion section for further analysis on inequality).

Migration has also been an avenue of upward socio-economic mobility for traditionally subaltern ethnic groups. This particularly applies to the ethnic groups of ismakhen (ex-slaves) and haratin (landless or smallholding serfs and sharecroppers), the “Black” oasis population who used to be subordinate to the “White” imazighen, who possessed the lion’s share of land and water resources. Many serfs, sharecroppers and former slaves seized the new opportunities that migration offered to to break away from the constraints of traditional oasis society and to accumulate considerable wealth. Besides their intrinsic value, investments in houses and land and the ability to fulfill the religious duty of the hajj (pilgrimage to Mecca) also symbolize their newly acquired status. Consequently, the significance of complexion and ethnic affiliation in determining socio-economic status has decreased.
Many of today’s agricultural practices still follow traditional patterns: they are highly labour-intensive, have low levels of mechanisation, use traditional irrigation methods (i.e., flood basin irrigation) and involve a generally reduced scale of agricultural production.

Nevertheless, oasis agriculture is currently undergoing a profound transformation. This simultaneously comprises a ‘vertical’ agricultural intensification in the ancient oasis and the ‘horizontal’ intensification to land reclamation, a process in which migration and remittances play a pervasive role.

In the lower Todgha, where surface irrigation water is scarce, many peasants have dug new wells and installed diesel water pumps enabling them to overcome traditional constraints of water scarcity in order to intensify agricultural production. It is mainly the influx of international remittances that has enabled households to afford to take the risk of digging a well and buying a diesel pump. The incidence of investments in pumps over the 1975-1998 period has been relatively high among international migrant households. Only 15.4 and 18.1 percent of non-migrant and internal migrant households, respectively, have invested in a water pump, as against 42.1, 42.2 and 43.1 percent among indirect, current and returned international migrant households, respectively. Within the group of investors, the latter have also tended to invest higher amounts than non-migrant and internal migrant households (see Table 4).

[Table 4 somewhere here]
Another major development has been the extension of oasis agriculture through the reclamation of new agricultural land in new, until recently barren, areas located in plains directly adjacent to the traditional oasis, where peasants rely almost exclusively on pumping. In the traditional oasis, plots are generally small and scattered, and the collective and complex organization pertaining to maintenance of small-scale irrigation systems and water distribution is increasingly considered as an obstacle to individual entrepreneurship. This explains why peasants often prefer to localise investments in areas outside the traditional oasis where inflexible collective regulations concerning water management do not apply, and where land is abundantly available.

This reclamation has been enabled through the advent of motorised pumping and has been stimulated by the influx of remittances. This has fundamentally transformed the agricultural landscape of the oasis in creating new agricultural frontiers in the desert. In contrast to the traditional oasis, agriculture on this reclaimed land is characterised by large plot sizes, a tendency towards monoculture and purely individual water management.

It was in the late 1970s that the local effects of the international migration boom started to materialise and that remittances enabled increasing numbers of sharecropper or landless households to buy land. In 1998, the surveyed households possessed 181 hectares of farmland outside the traditional oasis, either inside or outside the valley. Two thirds (67.1 percent) of this acreage was bought after 1975, predominantly by international migrant households, who together account for 82.0 percent of the total invested sum and 72.1 percent of the purchased acreage.

In a way largely similar to investments in pumps, international migrant households have a significantly higher tendency to purchase land than do other households (see Table 5). More
than one quarter of international migrant households have purchased agricultural land, compared with less than 10 percent of non-migrant households. On the whole, there are fewer households investing in land purchase (16 percent) than in pumps (27 percent), but the strength of association is only slightly lower. Within the group of investors, the association between migration participation and investments is even stronger and more significant. Since the invested amounts are generally larger, the average investment in land purchase for all households is even slightly larger than for pumps. While 41.2 percent of the purchases are made in the traditional oasis, these represent only 18.3 percent of the total purchased acreage. Of the land purchased outside the traditional oasis, 65.2 percent is located outside the Todgha valley, mainly in the Middle Atlas region. This is an ethnically similar, equally Berber-speaking area, where the relatively humid climate allows for rainfed wheat farming.

[Table 5 somewhere here]

It has been hypothesised in the literature that migration would lead to a retreat from agriculture through the “lost labour effect”, manifesting itself in the large amount of agricultural land that is left fallow. Empirical evidence from the Todgha seems to refute this hypothesis. There is no clear association between migration and fallow land among the land-owning households. In fact, the incidence of fallow land among land-owning households is highest (14.7 percent) among non-migrant households and lowest (3.2 percent) among international returnees (see Table 6). Although migration-related abandonment of land sometimes occurs, it is generally a temporary phenomenon occurring in the first years after migration.

[Table 6 somewhere here]
The incidence of fallow land is highest in the water-scarce lower Todgha. Since agriculture largely depends on pumping, agriculture here is relatively capital-intensive. This also means that water resources are more difficult to access for households lacking sufficient means to install pumps or buy water from pump-owners. Consequently, the poorest sections of the local population, mostly non-migrant — and sometimes internal migrant — households, are forced to retreat partly or entirely from agriculture. Therefore, poverty rather than migration as such seems to be the prime factor forcing households out of agriculture.

The fundamental conceptual weakness of the lost labour hypothesis appears to be its ignorance of the possibility that migrants’ labour is substituted by household members, sharecroppers, remunerated workers and, partially, mechanisation. At first sight, partial substitution of lost family labour by paid labourers and sharecroppers does indeed seem to occur (see Table 6). There is a clear association between international migration participation and the employment of agricultural labourers. There is a less strong, but still significant, association between participation in international migration and the incidence of sharecropping. While paid labour is increasingly replacing traditional sharecropping arrangements, the price of agricultural labour has considerably increased thanks to increasing demand and the decreasing availability of people willing to perform manual agricultural jobs. While traditionally sharecroppers used to retain 1/5 of the yield, at the time of the study they retained on average 41 percent of the harvest.

Remunerated agricultural labourers are generally employed during peak seasons, such as for the olive, date (fall) and cereal (spring) harvests, for ploughing, or for special tasks, such as the digging of new wells and maintenance work. Family members, particularly women,
assume most of the daily agricultural work (i.e., weeding and harvesting alfalfa). Internal migrant households generally lack the financial means to hire agricultural labourers to compensate for the “lost labour effect”. This generally leads to a considerable increase in the agricultural workload of women in such households.

Interestingly, indirect and returned international migrant households – where there is no “lost labour” – contract out work to the same degree as current migrant households. It then becomes doubtful whether “lost labour” can be a major cause of this phenomenon. A more likely explanation seems to be that access to international remittances has enabled households to give up agricultural duties that are regarded as heavy and unpleasant, such as ploughing and maintenance of the irrigation infrastructure. Younger, educated and ambitious household members are generally no longer willing to work in agriculture, so that households are obliged to engage hired labourers or sharecroppers. For return migrants, an additional argument for hiring external labour may be that they are relatively aged.

Only six (1.2 percent) of the surveyed households have purchased a tractor and a similar number of households have purchased other heavy agricultural equipment, notably threshers. Of these twelve investors, nine belonged to international migrant households. Owners of agricultural equipment gain an additional income from renting this equipment to other households. International migrant households also tend to spend more on the hire of agricultural machinery and the purchase of agricultural capital inputs, such as fodder, fertiliser (in addition to manure), pesticides, High Yielding Variety (HYV) seeds and fruit tree seedlings (see Table 6). There is also a significant association between international migration participation and the possession of cattle (see Table 6). Agricultural produce in the Todgha is still mainly destined for self-consumption, although the marketing of some crops, like dates
and almonds, is becoming more common, especially among international migrant households. Peasants are also increasingly looking to trade their livestock and sell dairy products in the growing local (urban) market of Tinghir.

There is a positive and significant association between international migration participation and the value of yearly agricultural produce (see Table 6). Thus, the higher incomes of international migrant households do not coincide with a lower relative importance of agriculture. This higher productivity cannot be explained exclusively by the fact that migration is positively selective for land ownership, since international migrant households also exhibit a higher propensity to invest in agriculture. Moreover, as we have seen, non-migrant and internal migrant households are more frequently forced to withdraw partially or entirely from agriculture as a result of interrelated capital and labour constraints.

The evidence presented strongly suggests that international migration has not led to a retreat from oasis agriculture, but that the counter-flow of remittances has instead enabled households to install pumps, reclaim new farmland, hire paid labourers and has therefore contributed to the increasing productivity of agriculture.

However, migration has also had negative effects on the functioning of traditional agricultural institutions and water management. The socio-economic emancipation of former slaves, serfs and sharecroppers accelerated the breakdown of traditional village institutions that used to enforce common law for land and water management and mobilised collective labour for the maintenance of the irrigation system. Because of intra-community conflicts between the traditional landed elite and emancipated, formerly subaltern, groups, people increasingly refuse to participate in collective work. It has become harder to enforce common law, and
free-rider behaviour (e.g., tapping water, but not maintaining the irrigation infrastructure, such as ditches and dams) have become serious problems.

As a consequence, the labour-intensive underground *khettara* irrigation systems in the lower Todgha have now run dry as a result of poor maintenance. This further obliged peasants to install water pumps, which tend to lower water tables and further contribute to the desiccating of traditional irrigation systems. Notwithstanding laws prohibiting unauthorised pumping, local authorities are failing to regulate the anarchic, largely uncontrolled boom in water pumps. Peasants witnessed a significant lowering of water tables during the 1990s, which they attribute to excessive pumping. This might pose a major threat to the sustainability of agriculture and has already led to the abandonment of newly established farms and, hence, to the waste of investment. As we have seen, the immediate consequence is that relatively poor non-migrant and internal migrant households, who are unable to invest in mechanised pumping, are partially or wholly forced out of agriculture.

**INVESTMENTS IN HOUSING**

The migration literature gives overwhelming evidence that labour migrants across the world give a high priority to housing investments. The Todgha valley is no exception to this rule. Simultaneously with processes of out-migration and high population growth, the Todgha valley has witnessed the massive movement of people out of the traditional, fortified adobe villages (known as *igherman*; sing. *ighrem*) to new, more spacious, detached and generally more luxurious houses, which are generally built next to the ancient *ighrem*. Several villages
which were located in infrastructurally isolated places, have been completely relocated to more distant places or even to the opposite bank of the valley.

Because the social and economic life of the valley is becoming increasingly oriented towards Tinghir and the outside world, good road connections have become increasingly important. New houses are therefore preferably located along the two paved roads running through the valley, which are now fenced off by a nearly continuous stretch of houses. The river oasis itself has become hemmed in by an almost uninterrupted zone of housing structures, which has almost completely replaced the old nodal settlement patterns of dispersed, fortified igherman. Most igherman are now abandoned and have rapidly fallen into ruin. Only some igherman located in Tinghir and other land-scarce places have been preserved because of settlement by relatively poor immigrants from surrounding regions.

Although the construction of new houses is a general process, international migrant households have been at the forefront of this development. Almost three-quarters (74.0 percent) of all real estate investments are made by international migrant households and constructing a house is typically the first investment migrants make.

Between 80 and 90 percent of the surveyed international migrant households have invested in construction since 1975, compared with 54.4 and 56.0 percent among non-migrant and internal migrant households, respectively (Table 7), while within the group of investors, preventing the loss of the fine architectural heritage of south Moroccan adobe fortresses appears to be possible only though governmental intervention. In the event of earthquakes or floods occurring in this region, or if it is badly maintained, the traditional adobe igherman can be dangerous to live in because of the risk of collapse. However, the major disadvantage of concrete brick houses is their poor insulating qualities compared with adobe, which protects houses better from the extreme cold and heat of the arid climate.
international migrant households tend to invest three times as much. International migrant households tend to construct relatively luxurious, concrete, better equipped and bigger houses. These patterns resemble those for income, household wealth, living conditions and agricultural investments. Again, the principal borderline is between households with and those without access to international migration resources, with insignificant differences within these two main groups.

[Table 7 somewhere here]

The Moroccan and general migration literature has tended to disapprove of such “non-productive” investments in housing. Scholars and policy makers have frequently “accused” international migrants of building large, richly ornamented houses in an urban style. These have been considered as “exaggerated” (Ben Ali 1996:354), reflecting a largely unnecessary and “irrational” (Aït Hamza 1988) use of money. This is typically accompanied by a call for policies to “divert remittances to productive sectors of the economy” (Agoumy 1988:159) through informing and “guiding” migrants towards better, more “rational” investment behaviour (Kaioua 1999:124). However, there seems to be ample reason to criticise this attitude as rather patronising, for blaming migrants’ “irrational” mentality a priori rather than trying to comprehend their motives.

Taking into account the specific social, cultural, economic and institutional context, the high priority of investment in housing is a rational choice. Firstly, it seems erroneous to explain the construction fever solely by the migrants’ quest for more status within their own community. The importance attached to housing should primarily be explained by a quest for space, safety, privacy, fewer conflicts and better health. The relatively large, new houses and the
durable consumer goods, sanitation and household appliances they tend to contain, can offer more convenient living and privacy than was generally conceivable in the packed, dark and dusty igherman dwellings.

Dismissing such improved well-being and standards of living as “non-developmental” reflects a narrow view of development. In fact, by suggesting that oasis dwellers should stay in their mud brick houses, wealthy and urban-based social scientists apply different standards to others than they would probably do to themselves. Interviews also revealed that women gain significantly in personal liberty through the establishment of new independent houses for their nuclear family – away from the authority of their parents-in-law.

Secondly, housing has also proved to be a relatively secure capital investment through which households are able to generate additional income through various lease arrangements. Furthermore, interviews revealed that house ownership also provides household “life insurance”. In the event of the death of the breadwinner or another significant loss of income, family members are guaranteed shelter and can gain rental income. This is particularly important in a society where most households do not have access to social security systems. Constructing houses is therefore also an investment in future livelihood improvement and stability.

57.6 percent of the international migrant households (against 27.2 percent among non-migrant and internal migrant households) have constructed second or third homes outside their native village. 24.8 percent of all houses are built outside the native village. Because of higher urban land prices, houses outside the village represent 43.8 percent of total real estate investments. There is relatively little extra-regional leakage of investments. Three quarters (76.6 percent)
of all houses outside the village (representing 64.7 percent of the total sum invested) are built in Tinghir and only 20.7 percent outside the Todgha valley, notably in Rabat.

The increasing tendency to construct houses in Tinghir is partly linked to the process of intravalley migration towards the valley’s urban centre. Although most real estate investments thus remain in the valley, they are becoming increasingly urban-based. More and more villagers wish to have a house in Tinghir to take advantage of the proximity of public services (water, electricity, health care, administrative centres), markets and schools. However, in many instances, these houses are also destined as a means of acquiring extra income through short- or long-term leases or sale. Taking into account the high population increase, fast urban growth and rising land and real estate prices, such investments have turned out to be a highly rewarding investment strategy. From the standpoint of migrant households, therefore, real estate is a relatively secure investment in a rather insecure investment environment.

INVESTMENTS IN PRIVATE ENTERPRISES

The association between international migration and investments in commercial enterprises (coffee houses, restaurants, grocery stores, transport etc.) is weaker than for agriculture and housing. Whereas 17.3 and 18.3 percent of non-migrant and internal migrant households have invested in this sector, 24.3, 25.7 and 35.9 percent of the indirect, current and returned migrant households, respectively, have done so. Investments in private business enterprises are a speciality of returned international migrants. Although the group of investors is relatively small compared with investment in agriculture and real estate, the invested amounts per investor are relatively large (see Table 8).
Investments in small grocery shops and other retail activities are most common, representing 42 percent of all new enterprises. These are relatively cheap investments, with a fair representation of non-migrants. The increasing orientation of oasis dwellers towards Tinghir has also created an increasing demand for transportation. Representing 23 percent of all established enterprises, investments in transport enterprises, such as taxis, delivery vans and trucks are the second most important investment category. Transportation is the business with the strongest link to migration, with international migrant households accounting for 75 percent of the total invested amount.

Another typical migrant activity is the establishment of coffee houses, restaurants and small hotels. International migrant households account for 88 percent of the total invested amount. Finally, there is a miscellaneous category of various small-scale investments, ranging from telephone shops, workshops (e.g., car and motor repair shops, smiths, carpenters) to tailors and laundries. There is no clear or significant association between international migration and investments in this category.

As a whole, international migrant households account for 68.4 percent of the total invested amount in private businesses. Only 26.4 percent of all enterprises, representing 17.6 percent of the invested sum, have been established in the villages of origin. Even more so than in the case of real estate, investments in private commercial enterprises tend to be allocated in Tinghir, accounting for 42.4 percent of all new enterprises and 41.5 percent of all investments. There has been only limited extra-regional “leakage” of investments.
percent of all enterprises, representing 28.2 of the invested sum are made in other places in the valley. About 16.0 percent of all enterprises, representing 12.6 percent of the invested sum have been established outside the Todgha, of which only half outside the province of Ouarzazate, in which the valley is located.

INDIRECT EFFECTS OF MIGRANT EXPENDITURE

Through investments in houses and businesses, international migrant households have simultaneously capitalised on, and actively contributed to, the urban growth and concentration of non-agricultural economic activities in Tinghir. More importantly, the higher consumption by international migrant households and the migration-driven construction boom and investments in private enterprises have created considerable local employment in Tinghir’s thriving house construction and crafts industry (e.g., carpenters, welders), car repair shops, hardware stores, retail trade in household utensils and building materials. Furthermore, they have provided employment for electricians, plumbers, tilers and people working in the service sector.

Many non-migrants work in housing construction and service jobs in Tinghir. Among non-migrant households, 86.2 percent have local, non-agricultural sources of cash income and 32.6 and 24.0 percent gain income from local construction work and the service sector, respectively. As we have seen, in agriculture, too, increasing reliance on paid labour has created employment, raised wages and sharecroppers’ shares. In this way, international migrants’ investments have created opportunities for the livelihood diversification and
improvement for non-migrants, too. This is another reason not to dismiss migrants’
consumption, housing and other “non-productive” investments as non-development al.

To a significant extent, the development of Tinghir into one of the main commercial centres
of southern Morocco is related to the increased consumption and investments by international
migrant households. The indirect positive effects of migrants’ expenditure and investments
have had a stimulating effect on the valley’s economy as a whole. In comparison with
surrounding areas, the valley has become relatively prosperous. The related increase in labour
demand has subsequently induced people from other, relatively poorer regions (such as the
Saghro Mountains, High Atlas, Drâa valley) to migrate towards the Todgha valley. In this
way, international out-migration and remittances have produced a counter-flow of internal
“reverse” migration.

This largely explains why migration has not led to a depopulation of the valley. Besides
natural population growth and return migration, out-migration has been counterbalanced by
immigration. The population of the entire valley more than tripled, from 20,000 to 62,000,
between 1952 and 1994. This increase of 210.0 percent is lower than the nation-wide urban
population growth of 486.1 percent, but higher than the national and rural population growth
of 173.7 and 75.0 percent, respectively. Tinghir especially, the urban centre of the valley, has
undergone a rapid growth (of 433.3 percent) through immigration from villages within and
outside the valley.
The presented empirical findings suggest that, in general, international migration has positively affected economic development in the Todgha valley. The relatively high, stable and secure nature of international remittance income enables households to improve living conditions and their wellbeing and to make various investments in housing, agriculture, private enterprises, and children’s education, allowing them to improve and secure their livelihoods further. This seems to support our hypothesis that labour migration is not only a livelihood strategy serving to diversify households’ income portfolio, but is also a means to overcome local market and institutional constraints on investments.

In addition, remittances seem to have had an indirect positive effect on the economy of the whole valley. Increased investments and consumption by international migrant households have significantly contributed to the growth, diversification, partial de-agrarisation and urbanisation of the regional economy and the creation of employment, from which nonmigrants profit in indirect ways.

International migration has also played a major role in the profound transformation of the physical landscape of the valley consisting of (1) massive construction of an almost continuous stretch of houses along paved roads and the river oasis which has completely replaced the old nodal settlement patterns of igherman; (2) the creation of a new agricultural frontier in the desert through motorised pumping and land reclamation; and (3) rapid urbanisation and the increasing concentration of social and economic activities in Tinghir.
In contrast with common perceptions, international migrant households do not generally spend excessive amounts of income on consumption, but tend to be prudent in deciding how to spend their money. Moreover, there has been only limited leakage of investments to other regions. The analysis of the spatial allocation of migrants’ investments corroborates the argument put forward by Jones (1998b) that differences in the scale of analysis may fundamentally affect the assessment of the impacts of migration on development.

For example, when restricting the analysis to the village level, one might conclude that many investments tend to leak away to urban areas, that is, the valley’s centre Tinghir. This would fit in with pessimistic views that migration leads to increasing disparities in rural and urban development. However, when the impact is analysed at the regional level (e.g., the Todgha valley), the conclusion is that most investments remain within the valley. Moreover, the direct and indirect positive spin-off of these investments is considerable. In the case of investments in land, the relatively high investment leakage has been mainly oriented towards the Middle Atlas which, on the national scale, is regarded as a peripheral region. This makes it difficult to give an unambiguous assessment on whether migration has exacerbated or decreased regional inequality.

Although these findings appear to be in line with the main hypotheses of NELM, there seems to be room for comment and refinement. Firstly, NELM focuses one-sidedly on market constraints in explaining labour migration from developing countries. Migration can also be a livelihood strategy to overcome socio-cultural constraints such as ethnic and gender inequality. For youngsters, in particular, migration abroad is also synonymous with better educational opportunities and more freedom of personal expression and behaviour. Thus,
migration is a livelihood strategy for overcoming local development and opportunity constraints in the broadest sense.

Secondly, the mainstream literature on migration and development focuses mostly on the role of return migrants as prime development actors. Because of their physical absence, migrants still abroad are considered to be less relevant and, for this reason, have even been excluded from surveys. However, this study indicates that these migrants may play an important role in development in migrant-sending areas. Migrants are often part of households seeking multi-local livelihood strategies, in which transnational links remain strong. Migrants send home considerable remittances, which enable nonmigrants to consume and invest in various economic activities, so that the physical presence of the migrant is not necessarily required.

Thirdly, it should be emphasised that the direct positive income effects remain mainly limited to international migration. The income and living conditions of internal migrant households do not significantly differ from non-migrant households. Because of low and uncertain incomes, migration often does not allow them to improve their households’ livelihoods by investing money in the local economy. Therefore, the economic rationale for internal migration could be the desire to spread risk through income diversification, rather than to increase income \textit{per se}. Internal migrant households’ incomes are more equally distributed than those of non-migrant households, where there is a higher incidence of absolute poverty (living on less than 1,000 dirhams per month). Internal migration also increases the chances of gaining access to better-paid jobs in cities and, eventually, to international migration. Having family members in the city may also facilitate the internal migration of others, such as younger siblings coming to university, as financial barriers may be lower and social support is
available. This shows that internal migration, although far less rewarding than international migration, is more than a mere “survival strategy”.

Fourthly, with regard to inequality at the intra-community and regional level, it is difficult to give an unambiguous answer to the question of whether the impact of migration has been positive. International migration has given rise to a new socio-economic divide between households with and without access to international migration resources. Sustained inequality between international migration “haves” and “have-nots” seems to be reinforced by the mainly kinship-based access to migration networks. Because of increasing reliance on pumps and generally increased capital-intensiveness, inequality in access to irrigation water is also increasing.

Many internal migrant and, in particular, non-migrant households face poor and unstable livelihoods. Such poverty, inequality and social insecurity is clearly not “developmental”. However, if we widen our historical and analytical perspective, there are two reasons not to jump to the conclusion that the impacts of migration have “therefore” been negative because inequality has increased.

It is important to avoid romanticising the past by acknowledging that traditional oasis society was inherently unequal, with its caste-like socio-ethnic stratification, in which most oasis dwellers lived in grinding poverty and inferior ethnic groups were restricted to serfdom or slavery. In essence, what has happened is that new forms of inequality, mainly based on access to monetary resources, which are to a considerable extent defined along lines of access to international migration, have been largely superimposed upon the traditional forms of structural, hereditary inequality based on kinship, complexion and land ownership. There are
no objective, scientific standards to determine which form of inequality was worse. However, we should not ignore the fact that traditional oasis society used to deny basic human freedoms to large sections of the population (women, slaves, serfs and sharecroppers). For many subaltern groups, migration literally constituted liberation and has been their main avenue to upward socio-economic mobility.

Furthermore, non-migrant and internal migrant households seem to have benefited indirectly from the employment and multiplier effects of migrant households’ consumption and investments. This has led to general, valley-wide, improvement of livelihoods and the reduction of absolute poverty. Although inequality remains an important feature of oasis society, the majority of internal migrant and non-migrant households are better off than half a century ago. This exemplifies the ambiguities involved in attaching relative weights to distributional versus absolute income objectives.

Fifthly, it would be wrong to assume that migration-driven development has led to a decreasing propensity to migrate. On the contrary, international labour migration, in particular, to southern Europe, experienced a resurgence in the 1990s. Although migration has arguably contributed to a substantial improvement in living conditions and to a decrease in absolute poverty, exposure to the relative wealth of migrants, along with drastically improved education and increasing media exposure, has spurred aspirations and increased feelings of relative deprivation among nonmigrants. The essential argument is that the personal aspirations of Todghawi have increased faster than local and national livelihood opportunities. In this way, we can explain the paradox that people continue to migrate, notwithstanding a substantial improvement in their livelihoods over the past few decades. Thus, migration seems
to be more the result of a certain level of increased personal aspirations, combined with relative deprivation, than of absolute poverty.

Finally, although this study challenges pessimistic perspectives, there is also reason to believe that the development potential of migration is far from being fully realised. Despite their higher inclination to invest, many international migrant households do not invest. Their disengagement from the economic fabric of oasis society often coincides with family reunification at the destination. Morocco in general and the Todgha in particular are not ideal investment environments. Besides slow economic growth and uncertain political conditions, excessive bureaucracy and corruption tend to complicate and slow down administrative procedures, such as obtaining business permits or title deeds on land, real estate and other property. The confrontation with rent seeking officials increases costs and perpetuates people’s generally low trust in the state’s institutions and their local representatives. The perceived unreliability of the state manifests itself in a general feeling of legal insecurity about property (cf. De Haas 2003). In the agricultural domain, the lack of regulation of the anarchic boom in water pumps potentially endangers the sustainability of oasis agriculture.

CONCLUSION

This study seems to confirm that migration may contribute positively to social and economic development in migrant-sending areas. However, it is crucial to observe that what is involved
is a potential, rather than a more or less predetermined, impact. Whether, and to what extent, the high development potential of migration is realised largely depends on the broader development context of migrant-sending regions and countries, a context which typically cannot be fundamentally altered by individual migrants. It is therefore important not to jump to the conclusion that the migration optimists were right because the migration pessimists turned out to be wrong (cf. Keely and Tran 1989:524). By postulating that migration is a household strategy to overcome local constraints on economic production and development, we should not infer that migration “therefore” contributes to development in sending areas. This would be like falling back from one determinism to the other.

Suggesting an automatic mechanism in which migration leads to more development (or the contrary) would be to ignore the accumulated evidence pointing to the differentiated nature of the spatial, temporal, social and sector-specific impact of migration. Besides conditions at the sending end, this impact is also contingent on the type, selectivity and duration of migration, as well as immigration policies and conditions at the receiving end. Consequently, the fundamental question for researchers is not whether or not migration leads to certain types of development, but why migration has more positive development outcomes in some migrant-sending areas and less positive or negative outcomes in others (cf. Jones 1998a: 4; Taylor 1999).

Poor infrastructure, corruption, a lack of trust in government institutions, a malfunctioning judiciary and legal insecurity, the absence of appropriate public policies (schooling, health care, land reform etc.), market failures and poor access to international markets prevent migrant households from taking the risk of investing their money in their regions and countries of origin and lower their incentive to return.
Migration impacts are therefore highly context-sensitive. Depending on the specific development context, migration and remittances may enable people to retreat from, just as much as to invest in, local economic activities. This is a key observation. Remittances, like any other source of external income, give households greater freedom to concentrate their activities and allocate investment to those economic sectors they perceive as most stable and profitable. It is this very capability-enhancing potential of migration that also increases the freedom of households to settle elsewhere, depending on the general development context.

Only if migration is accompanied by improvements in the general development context of the sending region and country and by sensible immigration policies that do not deter migrants from circulating, can its high potential be fully realised. Under unfavourable conditions, migration and remittances may also give households the capability and freedom (which, for them, represents “development”) to effectively retreat from local and regional economies. This often coincides with family reunification and permanent settlement at the destination, in which case, migrants vote with their feet.
REFERENCES


Table 1 Total monthly cash household income by household migration status

<table>
<thead>
<tr>
<th>Household migration category</th>
<th>&lt; 1</th>
<th>1-1.69</th>
<th>1.7-2.59</th>
<th>2.6-4.5</th>
<th>&gt; 4.5</th>
<th>Total</th>
<th>Mean $/capita/day</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-migrant</td>
<td>37.0</td>
<td>26.7</td>
<td>17.6</td>
<td>11.5</td>
<td>7.3</td>
<td>100.0</td>
<td>2.113</td>
<td>1.11</td>
<td>165</td>
</tr>
<tr>
<td>Internal</td>
<td>18.5</td>
<td>33.1</td>
<td>17.7</td>
<td>19.4</td>
<td>11.3</td>
<td>100.0</td>
<td>2.399</td>
<td>1.01</td>
<td>124</td>
</tr>
<tr>
<td>Indirect international</td>
<td>8.3</td>
<td>16.7</td>
<td>22.2</td>
<td>25.0</td>
<td>27.8</td>
<td>100.0</td>
<td>3.709</td>
<td>1.60</td>
<td>36</td>
</tr>
<tr>
<td>Current international</td>
<td>4.0</td>
<td>6.0</td>
<td>26.0</td>
<td>29.0</td>
<td>35.0</td>
<td>100.0</td>
<td>5.373</td>
<td>1.96</td>
<td>100</td>
</tr>
<tr>
<td>Returned international</td>
<td>3.2</td>
<td>8.1</td>
<td>16.1</td>
<td>25.8</td>
<td>46.8</td>
<td>100.0</td>
<td>5.080</td>
<td>2.10</td>
<td>61</td>
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<tr>
<td>Total</td>
<td>19.1</td>
<td>20.9</td>
<td>19.5</td>
<td>19.9</td>
<td>20.5</td>
<td>100.0</td>
<td>3.347</td>
<td>1.46</td>
<td>487</td>
</tr>
</tbody>
</table>

\( \eta=0.349^{**}; \) Gini-index=0.486

Source: Survey by author
Table 2. Income composition at the household level by household migration status

<table>
<thead>
<tr>
<th>Household migration status</th>
<th>Mean monthly household cash income (dirham) (%)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agriculture</td>
<td>Leasing land and houses</td>
<td>Other local</td>
<td>Internal remittances</td>
<td>International remittances</td>
</tr>
<tr>
<td>Non-migrant</td>
<td>320 (15.2)</td>
<td>194 (9.2)</td>
<td>1,472 (69.8)</td>
<td>123 (5.8)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Internal</td>
<td>281 (11.7)</td>
<td>47 (2.0)</td>
<td>1,225 (50.8)</td>
<td>859 (35.6)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Indirect international</td>
<td>661 (18.0)</td>
<td>416 (11.3)</td>
<td>516 (14.0)</td>
<td>138 (3.8)</td>
<td>1,946 (52.9)</td>
</tr>
<tr>
<td>Current international</td>
<td>578 (10.8)</td>
<td>242 (4.5)</td>
<td>1,349 (25.3)</td>
<td>200 (3.7)</td>
<td>2,971 (55.6)</td>
</tr>
<tr>
<td>Returned internation.</td>
<td>639 (12.8)</td>
<td>215 (4.3)</td>
<td>1,276 (25.6)</td>
<td>128 (2.6)</td>
<td>2,721 (54.7)</td>
</tr>
<tr>
<td>Total</td>
<td>430 (13.0)</td>
<td>186 (5.6)</td>
<td>1,286 (38.8)</td>
<td>326 (9.8)</td>
<td>1,090 (32.8)</td>
</tr>
</tbody>
</table>

Source: Survey by author
Table 3. Wealth, living conditions and daily consumption by household migration status

<table>
<thead>
<tr>
<th>Household migration status</th>
<th>Wealth index</th>
<th>Index of living conditions</th>
<th>Daily consumption (Dirham per month)</th>
<th>% of total income spent on consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-migrant</td>
<td>2.5</td>
<td>1.8</td>
<td>837</td>
<td>39.6</td>
</tr>
<tr>
<td>Internal</td>
<td>2.4</td>
<td>1.6</td>
<td>1,009</td>
<td>42.0</td>
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<tr>
<td>Indirect international</td>
<td>5.2</td>
<td>3.2</td>
<td>1,173</td>
<td>31.6</td>
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<tr>
<td>Current international</td>
<td>5.8</td>
<td>3.3</td>
<td>1,388</td>
<td>25.8</td>
</tr>
<tr>
<td>Returned international</td>
<td>5.8</td>
<td>3.7</td>
<td>1,250</td>
<td>24.6</td>
</tr>
<tr>
<td>Total</td>
<td>3.7</td>
<td>2.4</td>
<td>1,069</td>
<td>31.9</td>
</tr>
<tr>
<td>N</td>
<td>503</td>
<td>499</td>
<td>500</td>
<td></td>
</tr>
</tbody>
</table>

\[ \eta = 0.510^{**} \quad \eta = 0.487^{**} \quad \eta = 0.344^{**} \]

Source: Survey by author
Table 4. Investments in water pumps by household migration status (1975-1998)

<table>
<thead>
<tr>
<th>Household migration status</th>
<th>Incidence (%)</th>
<th>Mean</th>
<th>Within group of investors (1000 dirham) (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Less than 10</td>
<td>10-39</td>
</tr>
<tr>
<td>Non-migrant</td>
<td>15.4</td>
<td>2,959</td>
<td>40.7</td>
<td>44.4</td>
</tr>
<tr>
<td>Internal</td>
<td>18.1</td>
<td>3,493</td>
<td>52.2</td>
<td>30.4</td>
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<tr>
<td>Indirect international</td>
<td>42.1</td>
<td>13,987</td>
<td>25.0</td>
<td>18.8</td>
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<tr>
<td>Current international</td>
<td>42.2</td>
<td>13,884</td>
<td>25.6</td>
<td>32.6</td>
</tr>
<tr>
<td>Returned international</td>
<td>43.1</td>
<td>13,438</td>
<td>10.7</td>
<td>39.3</td>
</tr>
<tr>
<td>Total</td>
<td>27.0</td>
<td>7,456</td>
<td>29.9</td>
<td>34.3</td>
</tr>
</tbody>
</table>

Contingency coefficient=0.333**; γ=0.406**; η=0.275**; η within investors’ group=0.236

Source: Survey by author
Table 5 Investments in land purchase by household migration status (1975-1998)

<table>
<thead>
<tr>
<th>Household migration status</th>
<th>Incidence (%)</th>
<th>Mean area (ha)</th>
<th>Mean (1000 dirham) (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-migrant</td>
<td>8.6</td>
<td>3,132</td>
<td>0.165</td>
<td>174</td>
</tr>
<tr>
<td>Internal</td>
<td>11.8</td>
<td>2,697</td>
<td>0.101</td>
<td>127</td>
</tr>
<tr>
<td>Indirect international</td>
<td>21.6</td>
<td>12,176</td>
<td>0.468</td>
<td>37</td>
</tr>
<tr>
<td>Current international</td>
<td>25.5</td>
<td>21,912</td>
<td>0.637</td>
<td>102</td>
</tr>
<tr>
<td>Returned international</td>
<td>29.2</td>
<td>20,962</td>
<td>0.406</td>
<td>65</td>
</tr>
<tr>
<td>Total</td>
<td>16.4</td>
<td>9,773</td>
<td>0.297</td>
<td>505</td>
</tr>
</tbody>
</table>

Contingency coefficient =0.282**; $\gamma=0.398**$; $\eta=0.242**$; $\eta$ within investors’ group=0.355*

Source: Survey by author
**Table 6. Migration and level and mode of agricultural production**

<table>
<thead>
<tr>
<th>Household migration status</th>
<th>% incidence, possession or using</th>
<th>% employment of</th>
<th>Monetary value of yearly agricultural produce in Dirham</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fallow</td>
<td>Fertilizer</td>
<td>Tractor</td>
</tr>
<tr>
<td>Non-migrant</td>
<td>14.7</td>
<td>27.0</td>
<td>8.6</td>
</tr>
<tr>
<td>Internal</td>
<td>8.0</td>
<td>36.8</td>
<td>7.9</td>
</tr>
<tr>
<td>Indirect international</td>
<td>6.3</td>
<td>55.3</td>
<td>36.8</td>
</tr>
<tr>
<td>Current international</td>
<td>7.9</td>
<td>62.4</td>
<td>23.5</td>
</tr>
<tr>
<td>Returned international</td>
<td>3.2</td>
<td>44.6</td>
<td>24.6</td>
</tr>
<tr>
<td>Total</td>
<td>9.2</td>
<td>41.0</td>
<td>15.6</td>
</tr>
</tbody>
</table>

| N                          | 413    | 504       | 504     | 507    | 504          | 505            | 183                                                 |

**Measure of association**

\[
\gamma = -0.337 \\
\gamma = 0.330 \\
\gamma = 0.376 \\
\gamma = 0.477 \\
\gamma = 0.436 \\
\gamma = 0.216 \\
\eta = 0.269
\]

* * * * * * * *

Source: Survey by author
Table 7. Investments in housing by household migration status (1975-1998)

<table>
<thead>
<tr>
<th>Household migration status</th>
<th>Incidence (%)</th>
<th>Mean</th>
<th>Within group of investors (1000 dirham) (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; 50</td>
<td>50-200</td>
</tr>
<tr>
<td>Non-migrant</td>
<td>54.4</td>
<td>47,858</td>
<td>51.6</td>
<td>36.6</td>
</tr>
<tr>
<td>Internal</td>
<td>56.0</td>
<td>46,592</td>
<td>47.1</td>
<td>40.0</td>
</tr>
<tr>
<td>Indirect international</td>
<td>81.1</td>
<td>178,095</td>
<td>20.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Current International</td>
<td>82.2</td>
<td>187,931</td>
<td>18.1</td>
<td>42.2</td>
</tr>
<tr>
<td>Returned international</td>
<td>87.7</td>
<td>220,231</td>
<td>21.1</td>
<td>47.4</td>
</tr>
<tr>
<td>Total</td>
<td>66.7</td>
<td>108,003</td>
<td>34.2</td>
<td>40.8</td>
</tr>
</tbody>
</table>

Contingency coefficient=0.395**; γ=0.406**; η=0.358**; η within investors' group=0.318**

Source: Survey by author
Table 8. Investments in private enterprises by household migration status (1975-1998)

<table>
<thead>
<tr>
<th>Household migration status</th>
<th>Incidence (%)</th>
<th>Mean (dirham)</th>
<th>5% trimmed mean</th>
<th>within group of investors (1000 dirham) (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-migrant</td>
<td>17.3</td>
<td>9,799</td>
<td>3,189</td>
<td>62.1, 17.2, 20.7, 100.0</td>
<td>168</td>
</tr>
<tr>
<td>Internal</td>
<td>18.3</td>
<td>11,011</td>
<td>2,728</td>
<td>65.2, 17.4, 17.4, 100.0</td>
<td>126</td>
</tr>
<tr>
<td>Indirect international</td>
<td>24.3</td>
<td>12,824</td>
<td>6,419</td>
<td>55.6, 33.3, 11.1, 100.0</td>
<td>37</td>
</tr>
<tr>
<td>Current International</td>
<td>25.7</td>
<td>19,878</td>
<td>9,810</td>
<td>53.8, 15.4, 30.8, 100.0</td>
<td>101</td>
</tr>
<tr>
<td>Returned international</td>
<td>35.9</td>
<td>118,386</td>
<td>21,540</td>
<td>30.4, 47.8, 21.7, 100.0</td>
<td>64</td>
</tr>
<tr>
<td>Total</td>
<td>22.2</td>
<td>26,581</td>
<td>6,014</td>
<td>53.6, 24.5, 21.8, 100.0</td>
<td>496</td>
</tr>
</tbody>
</table>

Contingency coefficient $=0.232^{**}$; $\gamma =0.234^{**}$; $\eta =0.186^{**}$; $\eta$ within investors’ group $=0.270^*$

Source: Survey by author